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Assessing the impact of social distancing and isolation on the mental health of older adults during the global Covid-19 pandemic using a bio-psycho-pharmaco-social approach.

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Assessing the impact of social distancing and isolation on the mental health of older adults during the global Covid-19 pandemic using a bio-psycho-pharmaco-social approach.

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Abstract

It is hard to predict or comprehend the impact of the global Covid-19 pandemic. The UK government advice for vulnerable people, including older adults to move towards self-isolation and social distancing is likely to reduce rates transmission, risk of severe illness and impact on the acute health services. Although justified and needed, this process of isolation is likely to have a negative impact on the mental health of these vulnerable groups. It will become increasingly important for community healthcare professionals to assess subtle changes in older person mental health as the duration of this period of isolation remains unclear. The bio-psycho-pharmaco-social model provides one method of assessing mental health and planning health and social care needs. This article will guide community healthcare professionals through the specifics of this assessment model in relation to the growing Covid-19 pandemic.

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Abstract

It is impossible to predict or comprehend the impact of the global Covid-19 pandemic on health a society. The UK government advice for vulnerable people, including older adults to move towards self-isolation and social distancing is likely to reduce rates transmission, risk of severe illness and impact on the capacity of acute health services. Although justified and needed, this process of isolation is likely to have a negative impact on the mental health of vulnerable groups including older adults. It will become increasingly important for community healthcare professionals to assess subtle changes in older person mental health as the duration of this period of isolation remains unclear. The bio-psycho-pharmaco-social model provides one method of assessing mental health and planning of health and social care needs. This article will guide community healthcare professionals through the specifics of this assessment model in relation to the growing Covid-19 pandemic.

Background:

These are unprecedented times where each day healthcare professionals are navigating uncharted waters (Fauci et al, 2020). In recent months there has been a lock-down in the global community. As Covid-19 spreads across the world, national borders have closed, and local neighbourhoods have been forced to pull together to interpret and translate guidance on how to limit the spread of disease at both a macro and micro level. In this brave new world, experts are yet to understand the extent of the physical, psychological and socio-economic impact of this virus, but too often the potential effect of Covid-19 on an individual's mental health is not adequately considered. Despite the exponential rise in workload across the profession, as nurses and healthcare professionals, it remains 'business as usual'. As the country moves towards a dictate of mandatory isolation to minimise the spread of Covid-19, there is a population who have substantial risk of mental health sequelae associated with the social isolation process (Brooks et al, 2020).

In the United Kingdom (UK), although there has been a slowing in population aging, the populace aged 65 years and over has continued to increase year on year for decades. Currently, 18.3% of the UK population is aged 65 or older and in the next 50 years, it is predicted that there will be an additional 8.4 million people aged 65 years or older (Office for National Statistics, 2019). For these people, the risks associated with increased age are well documented in the literature, these include

but are not limited to: increased physical health problems and multiple co-morbidities; chronic pain; poly-pharmacy and medication side effects; change in relationship status and independence; loss of mobility and flexibility; change in work and financial status; and social isolation (Nitschke et al, 2013, Jaul & Barron, 2017). This article aims to explore the risk of mental health sequelae in older adults required to self-isolate as both preventative and transmission restrictive measures specifically during the Covid-19 pandemic. It is important to note that mental health is not an isolated construct and needs to be understood in the context of the greater health status of an individual. To this end, the authors have provided context through other components of health status all of which have the potential to impact on mental health. Finally, the authors propose that a holistic framework for assessing the needs of isolated individuals at home will have an impact on the overall mental health of individuals and suggest a specifically tailored model that may be easily adapted into routine practice in the community setting.

Covid-19

Covid-19 is a novel coronavirus and part of a large group of viruses that cause illness ranging widely in severity (Guan et al, 2020). From a historical perspective the impact of coronavirus related illness on humans is only pertinent in recent history with the first severe epidemic occurring in 2003 when Severe Acute Respiratory Syndrome (SARS) occurred in China. More recently, in 2012 the Middle East Respiratory Syndrome (MERS) occurred in Saudi Arabia resulting in an epidemic in that region of the world. It became apparent across the globe that a novel strain of coronavirus associated with severe illness had broken out in China on December 31st 2019 when the government reported the outbreak to the World Health Organisation (WHO) (Scripps Research institute, 2020). The virus was subsequently coined 'SARS-CoV-2'. As with SARS and MERS it appears likely that Covid-19 has jumped from another animal host to humans as part of the virus' natural evolution (Kristian et al. 2020; Scripps Research Institute, 2020). The spread of Covid-19 throughout the world has been heavily reported through multi-media sources and the WHO declared the Covid-19 outbreak to be a global pandemic on 11/03/2020 (Van Beusekom, 2020).

Although it is a challenge to find scientifically sound and robust data during an ongoing pandemic such as this, it has been suggested from data collected in China that older people (aged 60 years and above) are in a high-risk category for infection with this virus (Guan et al, 2020). It has been suggested that the reason behind this vulnerability does not purely relate to an individual's physical health state, but also related to social inequalities (World Economic Forum, 2020). Whilst this population may have reduced immune response to infective disease processes, they are also more likely to have underlying co-morbidities (for example: heart, lung and kidney disease). It is widely accepted that these co-morbidities impact further on an individual's ability to effectively manage

infection. Socially, older adults are more likely to experience isolation and poverty and both these factors are recognised to impact on an individual's general health status. Isolation and being not technologically up-date make the identification of accurate information increasingly challenging in a fast-changing environment where government and healthcare advise changes on an almost daily basis. Poverty adds unique and complex set of challenges for older adults but in the current state of supermarkets with no products on their shelves, this can result in individuals struggling to find the items required to remain fit and healthy (World Economic Forum, 2020). When considering mental health and wellbeing it is important to acknowledge that this is not isolated from other components of health including physical, pharmacological, social and psychological. Each component of the individual's health is interlinked and a change in one will have an impact on the others.

Self-isolation and social distancing:

The government has asked the UK older population to be compliant with a programme of social distancing and isolation for what may be an indefinite time period. Quarantine or medical isolation is defined as "...the separation and restriction of movement of people who have potentially been exposed to a contagious disease to ascertain if they become unwell, so reducing the risk of them infecting others" (Brooks et al, 2020). Although justified, this forms a significant restrictive intervention on a large proportion of the UK population and the potential impact of restrictive practices have been recognised to result in a negative impact on all aspects of health and wellbeing (Xyrichis et al, 2018). Despite this, it is likely that these measures will reduce the transmission of Covid-19 in what has been defined as a key high-risk population (Hellewell et al, 2020). For these individuals, this means avoiding all contact with people who are unwell but particularly individuals with a pyrexia and/or a new or continuous cough. This means avoiding the use of all non-essential public transport and avoiding peak travel times. Most important of all, social distancing requires the avoidance all gatherings of people including at home, public places and with family and friends (Public Health England, 2020). There were around 1.4 million older adults who were chronically lonely and isolated prior to the Covid-19 pandemic (Age UK, 2020). It is important to recognise the impact of current social restrictions on this number and acknowledge that during these unprecedented times, this number is destined to be drastically higher in both younger and older populations.

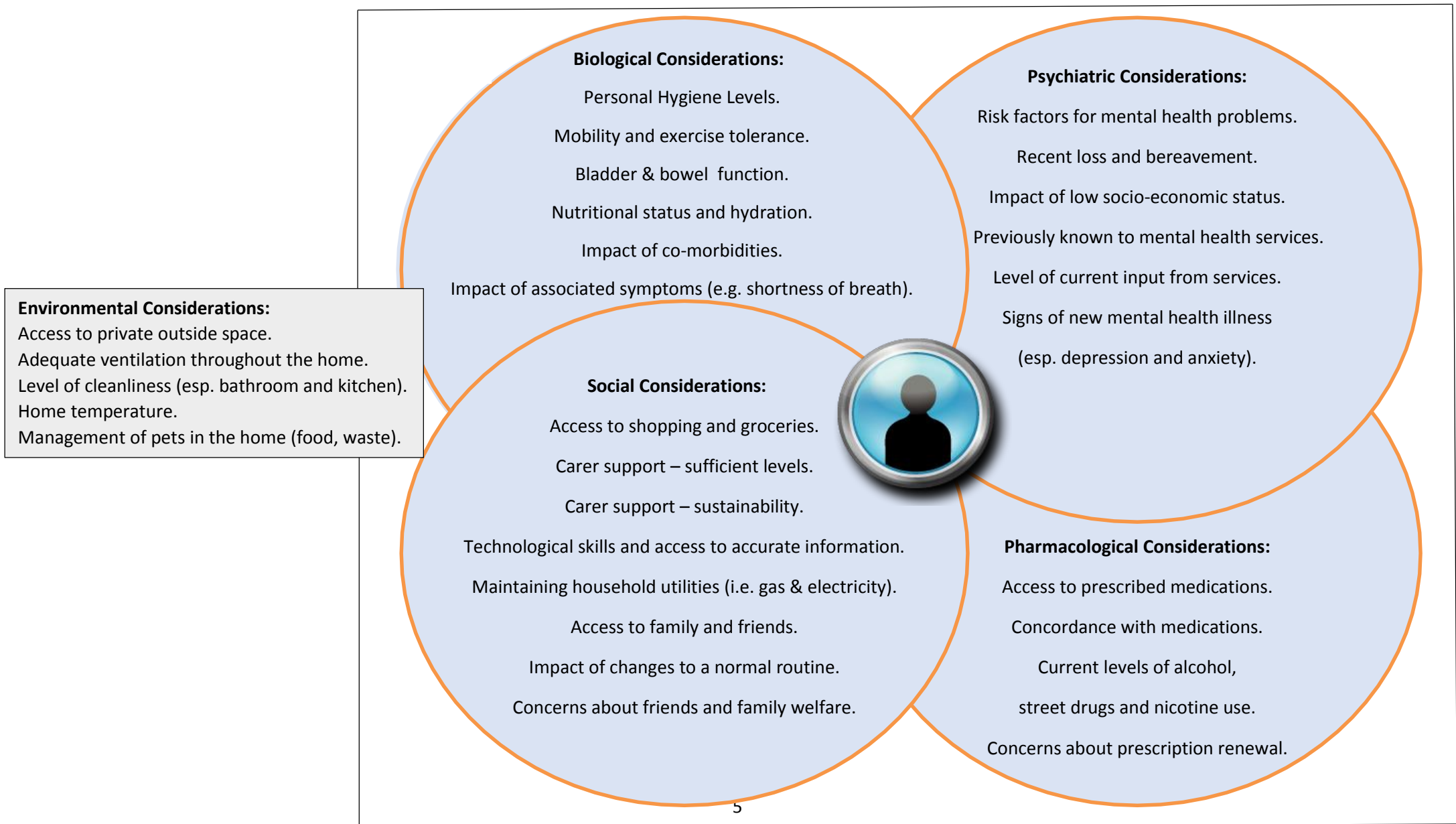
Where older adults in the community setting are currently self-isolating, their contact with healthcare professionals will become a key aspect of their social interaction. It is now more important than ever to ensure that effective health promotion and wellbeing advice is given to these individuals and that this information is accurate and where possible, evidence based. Public Health England (2020) has provided guidance on how older or vulnerable adults can access further food and

medicine resources during isolation. This guidance focuses on getting help from family members, friends and their local community as well as online services (Public Health England, 2020). This doesn't account for the challenge of getting support particularly for the most vulnerable older adults who were socially isolated prior to this pandemic. As healthcare professionals, having a good knowledge of the services that are currently available in each local community enables you to effectively signpost these individuals which may be a sustaining force in the coming weeks and months.

The Bio-Psycho-Pharmaco-Social model:

The bio-psycho-pharmaco-social (BPPS) model is a recognised approach to assessment and management of challenging behaviours and psychiatric illness in both mental health and acute settings (Clark et al, 2017, Hext et al, 2018). The approach looks at the four domains of health (i) Biological; (ii) Psychological; (iii) Pharmacological; and (iv) Social, at an individual level and then in combination, assessing the impact of one domain on the other three within the individual's current environment. Furthermore, the model can be used in psychiatric formulation, diagnosis or purely as an assessment tool (Clark & Clarke, 2014). The authors have adapted this model to provide a conceptual method of thinking about mental health of older adults that are currently isolated due to Covid-19. This could be used to assess the mental health status of this population when making assessments or providing care in their home setting. **Figure 1** presents the adapted BPPS model with assessment and risk considerations for older adults isolated during the UK Covid-19 outbreak.

Figure 1: The Bio-Psycho-Pharmaco-Social assessment model for risks to mental health during social distancing and isolation



Biological (physical) aspects:

For adult nurses working in the community, physical health assessment is an integral component of daily nursing practice and it is beyond the scope of the article to discuss the process of physical health assessments. When assessing either physical and mental health in an individual, it is important to remember that these are interdependent and certainly, in the case of mental health, cannot be assessed in isolation. Diagnostic overshadowing is the risk associated with undertaking an assessment of one component of health without incorporating the other dimensions. This can happen when secondary symptoms are not explored but attributed to a primary diagnosis. It is a common problem in patients with both physical and mental health problems as physical health symptoms (e.g. confusion) are credited to the mental health problem (or treatment) and not to a potential physical health cause (Hext et al, 2018). The impact of this can be enormous and could account for some of the high levels of mortality and morbidity amongst people with mental health problems and intellectual disability (Shefer et al, 2014, Javid et al, 2019). Assessment should consider the impact of physical health problems including significant co-morbidities as these have been recognised to impact on mental health (The King's Fund, 2012). Key areas to consider include changes in mobility and exercise, ability to self-care, continence and personal hygiene. Changes in these biological and behavioural factors can be key early indicators of negative change in mental health. For older adults in isolation due to Covid-19 it is likely to be challenging to reach out for medical support. Access through General Practice and NHS111 have already been restricted and these restrictions are likely to become tighter over time. For older patients where physical health needs are unmet due to resource limitations, there is a likely negative impact on all other components of health including mental health.

Psychological aspects:

Loneliness is a major issue in an aging population without the added burden of imposed social isolation. Risk factors include the female gender, living alone, poor financial status, lower educational level, unsafe neighbourhoods, poor quality of social relationships and poor reported health and functioning, bereavement, shame and fear (Cohen-Mansfield et al, 2016). Such factors are often compounded by deteriorating physical health issues and sensory loss such as sight and hearing (Weinstein et al, 2016) which have a major impact on social and emotional loneliness in an already isolated population.

Sedentary behaviour has been shown to have an impact on life satisfaction. Sedentary behaviour and physical activity are health behaviours with established person to person associations with global indicators of well-being (Maher et al, 2017). Therefore, imposed isolation with a reduction of physical activity will impact on life-satisfaction and ultimately on mental health status.

For many frail older adults their main informal carer may be their spouse or relative. The informal carer may have previously benefited from social interaction and support through regular family visits or brief outings to a support group or something similar. Imposed social isolation will also have an impact on the mental health of these informal carers.

Mortality is a basic fear factor surrounding Covid-19, especially in an older population and it is postulated that many are already suffering signs of anxiety and depression. Due to social isolation the media, particularly television and radio, becomes even more important. However, in the current climate, news coverage may cause distress and heighten anxiety.

For those older adults already known to mental health services it is important to note that the Covid-19 crisis is already impacting on an already stretched mental health service provision. Community Mental Health Teams, including Home Treatment and specialist older adult mental health services will also be potentially subject to increased staff sickness. Due to an anticipated staffing crisis in the mental health service system, plans for temporary changes to the Mental Health Act (1983) have been introduced through parliament, these will not apply immediately but will be activated should the situation worsen. (Rethink, 2020).

Pharmacological aspects:

When considering the impact of pharmacological status on an individual's mental health there are several factors that need to be considered. When undertaking an assessment, it is important to consider whether the patient is established on any psychiatric medications (e.g. anti-psychotic medication, mood stabilisers). The implication of running out of these medications, for patients who rely on them to maintain psychiatric functioning is clear and has the potential to be a significant stressor for an individual (Iseselo and Ambikile, 2017). Similarly, for patients established on long-term analgesic agents or life sustaining medication used in chronic disease management it is likely that the pharmacy supply chain will remain a great stressor during any episode of isolation. In these cases, it will become imperative for healthcare professionals to reassure patient's and ensure they have a clear understanding of the current local process for accessing stocks of these medications. Furthermore, where regular therapeutic monitoring of drug serum levels, adverse effects/reactions or drug effectiveness are required, it will become increasingly important to support patients in ensuring they can access this healthcare in the community (Padoin, 2017, Kang and Lee, 2009).

For some patients, it will become increasingly challenging to source over the counter medications such as Paracetamol. With the growing fear over self-management of viral illness symptoms at home, it might be necessary to support older adults in accessing these medications, if required. There have also been growing concerns voiced through the media about the potential risks

associated with the use of Ibuprofen when symptomatic for Covid-19. Although there is no strong evidence available at this point to prove or disprove this, there are new recommendations in place suggesting that Ibuprofen should be avoided by anyone with symptoms of Covid-19 (Day, 2020). As it is often difficult for patients to unravel the true medical meaning of research or advice, particularly when presented through the media it is important to consider how this information may be interpreted or misinterpreted within the community. Similarly, there has been speculation over the risk of severe symptoms for Covid-19 positive patients who were established on Angiotensin Converting Enzyme Inhibitors (ACEI) and Angiotensin Receptor Blockers (ARB) (Fang et al, 2020). The current guidance supports continuing treatment with these medications, but patients may need education and reassurance to ensure they remain concordant with their prescribed medications (European Society of Cardiology, 2020). What is consistently clear when assessing the link between a patient's pharmacological status and their mental health is the level of fear and anxiety associated with maintaining enough access to both the healthcare system and their supply of medications. Healthcare professionals in the community setting are in a unique position to provide support, education and reassurance throughout this extended period of isolation.

Social aspects including Environmental considerations:

Activities such as going to church, the hairdresser or cinema, meeting for a coffee or a gentle exercise group with friends add pleasure to an often otherwise 'humdrum' weekly routine. The impact of removal of such treats through social isolation may lead to feelings of negativity.

Through social isolation younger generations can keep in touch with friends and family through technology and social media. A lack of IT skills may be noticeable in older generations and some remain internet naïve, especially those with poor financial status and a lower educational level (Vaportzis et al, 2017, Berkowsky et al, 2018). It is important that where older adults are socially isolated that they are assisted with accessing means of staying in contact with family members and friends and this is likely to be the most effective method in improving an individuals mental health during Covid-19 isolation (Cotton et al, 2013).

The need for access to fresh air, adequate temperature and good ventilation is paramount even if it is too cold to be outside for long periods. Encouragement to spend time in a private outside space such as a garden, courtyard or balcony is helpful. Moreover, walks in parks and green spaces (whilst adhering to social distancing), have been shown to enhance physical and mental wellbeing through sensory experiences (Franco et al, 2017).

Physical environment, as well as social contact has been shown to have association with depressive symptomology in older adults living alone (Park et al, 2019). Hygiene may be a factor for

consideration, especially if the older person is deprived of social or family help around the home during the Covid-19 crisis. Sensitively tackling hand and personal hygiene, continence care and hygienic management of equipment such as commodes, handrails, wheelchairs, bathrooms and lavatories is essential. Home hygiene, especially around the kitchen and food preparation areas may lead to cross contamination if not maintained. There could also be implications for the care of pets.

Oral hygiene has been shown to have a greater impact on general health and quality of life issues than previously thought (Masood et al, 2017). There is an on-going need for screening and treatment in the population aged over 65 years.

Formulating the Assessment:

After completing an assessment using the BPPS, it is important that these data are formulated for both outcome and coping mechanisms. Formulating a mental health 'diagnosis' is often more complicated than in physical healthcare as there is less delineation within these disorders and a great deal of experience is required (Aultman, 2016). For healthcare professionals in contact and caring for isolated older adults, it is important to be aware of potential mental health disorders associated with isolation including depression and anxiety. Table 1 presents an overview including the symptoms relating to mental health problems associated with isolation and red flags for professionals to be aware of (Mayo Clinic, 2018a, Mayo Clinic, 2018b). It is important to note that although anxiety and depression are likely to be the most common mental health problem community healthcare professions identify during assessment, there are many other mental health, psychiatric and physical health problems that can mimic these mental health problems in older adults (i.e. delirium caused by infection). Where symptoms are identified that do not fit the anxiety and/or depression picture that these should be escalated for medical review.

Table 1: Mental health formulation, with sign, symptoms and red flags:

Disorder:	Signs and Symptoms:	Red Flags:
Anxiety	Feeling nervous, restless or tense Sustained sensation of danger Sustained increased pulse rate Hyperventilation Increased perspiration Unexplained tremor Decreased concentration Poor sleep hygiene Nausea, vomiting or diarrhoea Increased lethargy Struggling to control worries and concerns Avoidance of triggers	Anxiety is impacting of all aspects of BPPS and daily life Individuals are unable to control anxiety and it is causing upset Anxiety is causing depression, issues of substance misuse or exacerbating other mental health problems

		<p>Anxiety is associated with a current physical health problem</p> <p>Anxiety is associated with suicidal thoughts or behaviours</p>
Depression	<p>Loss of interest in normally daily activities</p> <p>Lethargy and lacking energy</p> <p>Notable weight loss or weight gain</p> <p>Change in appetite</p> <p>Anxiety, agitation or restlessness</p> <p>Feeling worthless</p> <p>Fixation on previous failures</p> <p>Thoughts about death and suicide</p> <p>Unexplained physical problems (e.g. back-pain, headaches)</p> <p>Memory difficulties and/or change in personality</p>	<p>Unexplained bodily pain</p> <p>Difficulty in concentration and decision making</p> <p>Sleeping too much or too little</p> <p>Changes in appetite and eating habits</p> <p>Anger, irritability or increased frustration</p>

Brooks et al, (2020) have identified the potential negative impact of self-isolation and social distancing on individuals' mental health in the general population during Covid-19. It is essential that healthcare professionals in the community setting able to sign post individuals coping mechanisms. These include regular exercise (within the limits of the home environment, garden or out in an open public space) and ensuring there is adequate ventilation throughout the home. Other advice may include identifying what an individual may enjoy doing whilst at home (e.g. reading, cooking), maintaining a healthy well-balanced diet and adequate hydration. It is also important to recognise the signs of altered mental health, these may include low mood and feelings, worrying and anxiety, problems sleeping and feeling confined or restricted. This can turn into unhealthy patterns of behaviour including use of illicit drugs and excessive use of alcohol and tobacco and these are likely to have a negative impact on mental health and wellbeing (Public Health England, 2020). As healthcare professionals working in the community helping isolated individuals plan safe and entertaining activities has the potential to impact substantially on their short and long-term quality of life.

Using BPPS for Care Planning:

The BPPS model is a logical and systematic process to focus the assessment of the mental health of older adults during social distancing and isolation during the Covid-19 pandemic. This approach is likely to alert healthcare professions to subtle changes in an individual's mental health. It is essential

that the outputs are used in the planning of the care for this vulnerable population. Examples of these patients' needs may include meeting unmet healthcare needs, planning activities, health promotion or homecare activities. It is important to acknowledge that for many community practitioners all of these aspects of assessment will be part of current practice, the BBPS provides a structured framework to draw these aspects of daily care together. Although this may initially appear to be more time consuming, this simply represents a logical thought process. To take this to a higher-level additional training may be required for some practitioners, however, this model could be integrated into future education programmes for healthcare professionals working in the community. It should now be clear that the construct of mental health is dependent on all other domains of health. Where these other domains are impacting on an individual's mental health it is important to recognise the increased potential risk for worsening prognosis over time if left unmanaged. As with all assessment frameworks, these have been constructed as guidance for professionals and are not exhaustive. In the context of clinical practice, the model does not supersede the experience of an individual practitioner but acts as a guide during this ongoing pandemic where providing community healthcare is becoming increasingly challenging. The BPPS has demonstrated good transferability and this model may be appropriate for use with other vulnerable population including long-term conditions, learning disabilities etc.

Conclusions:

The Covid-19 pandemic is likely to become the greatest challenge for healthcare systems globally for many generations. Whilst the most pronounced focus remains on treating the systemic effect of the virus amongst positive patients, it remains key that nurses don't lose sight of the impact of social distancing and isolation on older people and globally on their local community. There is a growing body of knowledge regarding the impact of isolation in this context, and it will become increasingly important for community healthcare professionals to assess the impact of this on vulnerable people. Further research will be required to fully understand the impact of the Covid-19 pandemic on loneliness and isolation in both the older and also younger populations of the UK which is likely to be under estimated and represented in the current literature. The BPPS model can be used to guide assessment of isolated patient's mental health and provides a structured approach that considers all domains of health and wellbeing. Most importantly, the outputs from these assessments could be used to plan the evolving mental health care needs of older adults who are likely to remain in isolation for a currently undefined period.

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Keywords:

Mental Health; Pandemics; Quarantine; Older Adults; Infection; Nursing.

Key Points:

1. The current Covid-19 global pandemic is will place extreme pressure on the UK National Health Service
2. Social distancing and isolation will limit transmission but is likely to result in poor mental health for the older population
3. Community nurses will play a key role in the assessment and management of mental health for these individuals
4. A systematic approach to mental health assessment which covers physical, psychological, pharmacological and social domains of health is needed to identify subtle changes in mental health
5. Healthcare professionals must understand the inter-relationship between each domain and the impact a change in domain has on the other three domains
6. The bio-psycho-pharmaco-social model is one method of systematic assessment of mental health in this population.

Reflective Questions:

1. Consider the impact of social distancing and isolation on older adults receiving community nursing care
2. What risk factors put these patients most at risk for poor mental health
3. Consider what local resources are available that may improve the mental health of older adults in the coming months
4. Identify what advice would be most helpful to older adults in the community during social isolation
5. Reflect on how the BPPS model could focus the mental health assessment skills of community nurses during the current global pandemic

Conflict of Interest:

- None to report

Figure 1: The Bio-Psycho-Pharmaco-Social assessment model for risks to mental health during social distancing and isolation

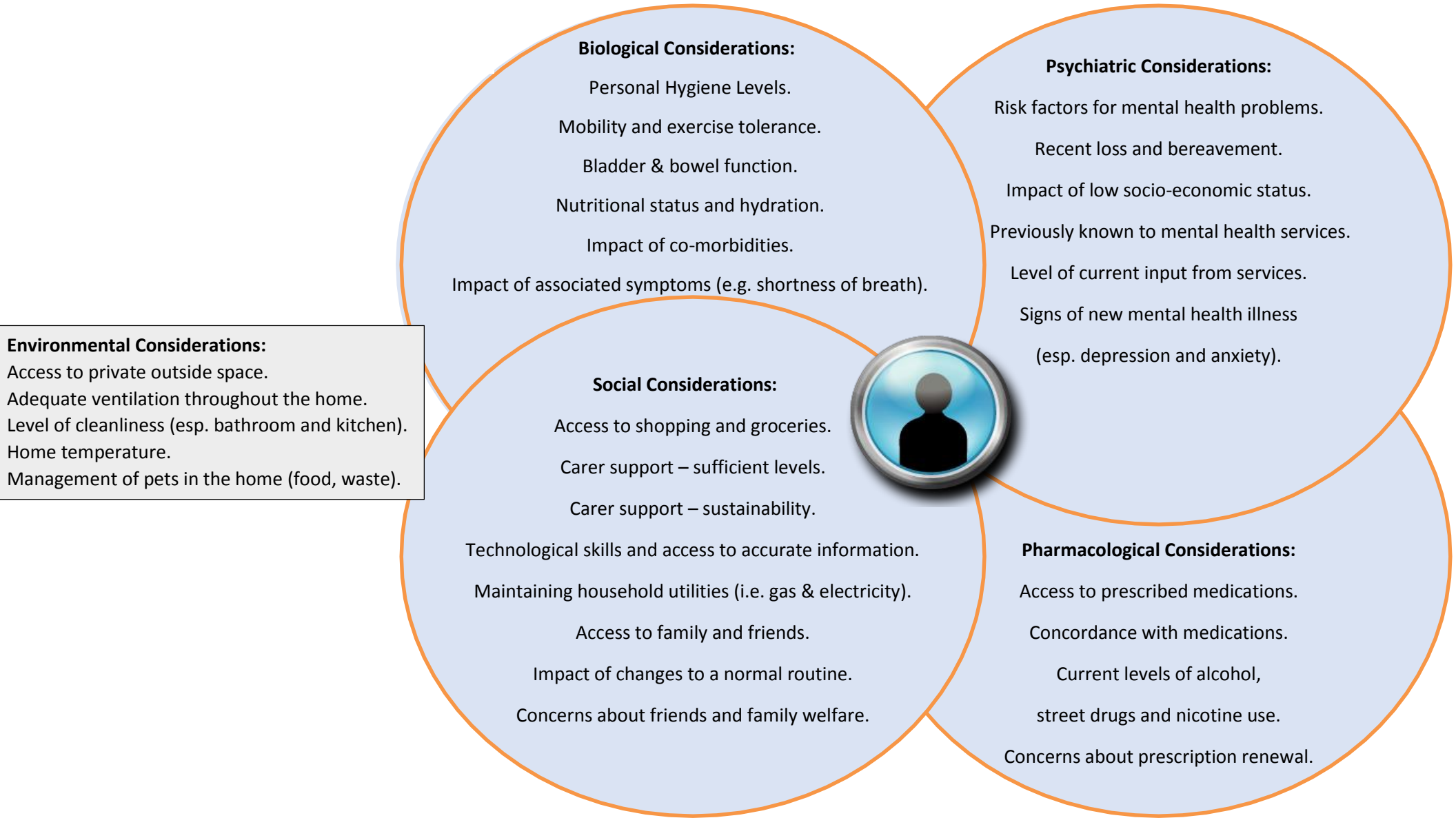


Table 1: Mental health formulation, with sign, symptoms and red flags:

Disorder:	Signs and Symptoms:	Red Flags:
Anxiety	<div>Feeling nervous, restless or tense</div> <div>Sustained sensation of danger</div> <div>Sustained increased pulse rate</div> <div>Hyperventilation</div> <div>Increased perspiration</div> <div>Unexplained tremor</div> <div>Decreased concentration</div> <div>Poor sleep hygiene</div> <div>Nausea, vomiting or diarrhoea</div> <div>Increased lethargy</div> <div>Struggling to control worries and concerns</div> <div>Avoidance of triggers</div>	<div>Anxiety is impacting of all aspects of BPPS and daily life</div> <div>Individuals are unable to control anxiety and it is causing upset</div> <div>Anxiety is causing depression, issues of substance misuse or exacerbating other mental health problems</div> <div>Anxiety is associated with a current physical health problem</div> <div>Anxiety is associated with suicidal thoughts or behaviours</div>
Depression	<div>Loss of interest in normally daily activities</div> <div>Lethargy and lacking energy</div> <div>Notable weight loss or weight gain</div> <div>Change in appetite</div> <div>Anxiety, agitation or restlessness</div> <div>Feeling worthless</div> <div>Fixation on previous failures</div> <div>Thoughts about death and suicide</div> <div>Unexplained physical problems (e.g. back-pain, headaches)</div> <div>Memory difficulties and/or change in personality</div>	<div>Unexplained bodily pain</div> <div>Difficulty in concentration and decision making</div> <div>Sleeping too much or too little</div> <div>Changes in appetite and eating habits</div> <div>Anger, irritability or increased frustration</div>

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